



**REPRODUCIBILITY IS IMPORTANT FOR
VERIFICATION AND VALIDATION, BUT
HINDERS PERFORMANCE.**

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WHY REPRODUCIBILITY?

- Helps with:
 - Verifying and validating code
 - When debugging code having ways to reproduce results increases productivity
- Each application has its own reproducibility needs and error bars

PERFORMANCE VS. REPRODUCIBILITY

- Performance and reproducibility are in tension with each other.
 - This is both answer reproducibility and performance reproducibility
- Things limiting reproducibility include, but are not limited to:
 - Numerical answers
 - Atomics
 - FMA
 - Performance
 - Varying clock frequencies
 - Network contention/job placement

WHAT CAN FACILITIES DO?

- Educate users
 - Explain what is needed to get reproducibility when its important
 - Describe the tradeoffs that occur when reproducibility is required
 - e.g. you can't use SHARP and be reproducible unless you get the same node set every time

